Application No.: 10/584,446

Reply to Office Action of December 09, 2010

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AMENDMENTS TO THE SPECIFICATION

Please amend the Description of the Invention Paragraph on page 3, beginning at line 6,

of the substitute specification as follows:

Description of the invention

The main purpose of this invention is to provide a biopolymer, produced by an enzymatic extract

or preparation having glucosyltransferase and fructosyltransferase activity. It is produced from a

Lactococcus lactis strain (NRRL B-30656) characterised by its high transfer activity, allowing

the biopolymer to be obtained by a simple production method which is easy to scale-up. The

biopolymer, obtained from Lactococcus lactis strain (NRRL B-30656), metabolism products

maintains a 0.2 to 0.7 glucose/fructose ratio. The biopolymer is characterized by presenting the

following properties: 900-11,000 Kilodalton molecular weight; two glass transition points; the

first between 20°C and 30°C and the second between 190°C and 220°C; stability in aqueous

solutions, pH values ranging from 2 to 9; 1,000 to 3,000 centipoises viscosity when the polymer

was at 10% to 20% concentration in an aqueous solution at 30°C; non-hygroscopic; and highly

soluble in water, able to form hydrogel homogeneous dispersions at maximum 50%

weight/volume concentration. Its production comprises the following steps: Phase 1:

fermentation with the Lactococcus lactis NRRL B-30656 strain in a culture medium developed

for this microorganism's growth; Phase 2: extracellular enzyme recovery trough centrifuging or

ultra-filtration; Phase 3: biopolymer production trough enzyme reaction using sucrose as

substrate and the enzymatic extract or preparation; and Phase 4: biopolymer purification trough

precipitation with solvents or ultra-filtration followed by drying the product.